

Mowing rules: old school, new school, no school

Several sport turf managers have inquired about proper mowing heights since their coaches requested lower mowing, usually to speed up the field. To answer this I give three basic mowing rules and then ask a lot of questions. Here are a few general mowing rules and actual examples from your fellow sports turf managers to show how mowing strategies need to change to fit specific needs:

In general the **one third mowing rule** suggests that you should not remove more than one third of the existing leaf canopy at each mowing, i.e., for a mower set at 2 inches mow when the grass gets to a height of 3 inches to provide a 1-inch clipping. The 1/3 rule was based on canopy removal studies that noted a decrease in rooting when more than 1/3 of the leaf volume was removed in a single event. It is interesting to note that the 1/3 rule was based on research using leaf volume and that for ease of interpretation it has evolved into a measure based on 1/3 of the mowing height. Either way the 1/3 rule is a good standard that reduces turfgrass scalping and root loss, yet it says nothing about mowing height strategy.

Taller mowing provides deeper roots. This rule is quite true and it has particular importance when dealing with heat and drought stress, especially in limited or non-irrigated situations. A taller mowing height provides canopy shade to cool the surface and deeper roots to survive drought. In non-irrigated situations raising the mowing height is advisable to survive summer stress.

In contrast, those with irrigation would be advised to maintain a consistent mowing height throughout all seasons. Raising the mowing height may have benefits but it also produces fewer shoots and less density. Within reason and as a rule, **shorter mowing increases shoot density and provides a better biomass-mat barrier to keep players from contacting the soil.** Shorter mowing usually requires more frequent mowing. If water is not limited then it is better to consistently train the grass for maximum density with shorter mowing rather than reducing density in the summer with taller mowing and then lower the mowing height just before autumn football.

Because leaf growth changes with fertilizer, water, and seasonal temperature I first fix the mowing height to match the sport, coach's expectations, and player ability. After agreeing on the height, and that's not always an easy task, develop a routine mowing frequency that does not violate the 1/3 rule and add some of your own ideas to make the field shine; here's how some of you have done it.

Northwestern University, Chicago, sand-based Kentucky bluegrass football field. Jeff Salmond, CSFM, has a strategy of maximizing turfgrass density and surface mat to prevent breakthrough and exposure of unstable sand. This field is typical of a high-end professional or college field. Jeff mows with a Toro triplex 2600 fairway mower and he is hoping to purchase the Sidewinder version so that he can side-shift the mower units and avoid wheel tracking when mowing yard line stripes. He mows Monday, Wednesday, and Friday without collecting clippings to keep up with the 1/3 rule. His mowing height varies between 1 3/8 to 1 1/2 inch from August through mid-October, and 1 1/4 inch at all other times.

He lowers the mowing height halfway through the autumn football season because the grass has worn some and slowed due to cold temperature. Lower mowing allows for some grass removal and a cleaner surface. From early spring through summer Jeff keeps the mowing height lower. "I like to train the grass for maximum density and keep it from getting too leafy and stringy. Once we've made the density during the spring and summer we raise the height back to the 1 3/8 to 1 1/2 range for the first half of the football season," he says.

This "new school" strategy is a good example of adapting old mowing rules into a sound strategy to fit the sport and coaches' desires. The "old school strate-

gy" would have been to raise the mowing height during the summer to avoid stress and lower it in the fall for the football season. Since drought is not a factor in this situation, Jeff options for the frequent and shorter mowing rule that maximizes turf density.

John Netwal has a different mowing strategy for the STMA Soccer Field of the Year from North-Scott, IA. John's sand-based high school soccer field is always mowed at 5/8 inch with a National Triplex reel mower. His mowing frequency can range from daily to every 3 days depending on rate of growth.

"We use Primo to regulate growth, reduce the amount of clippings, and produce a thicker turf . . . without the Primo we would never be able to keep up with the mowing on our budget," he says. "Because the clippings are so small we can keep the mowing height low and still operate the mower faster which cuts down our mowing time."

This quality of mowing is not usually found at the high school level, but John has been one the leaders in bringing new rules to the old school. John has even been letting the football team use the soccer field for special events, now there's a switch.

I haven't forgot about you cool cats in the warm climate. Luke Yoder, Director of Field & Landscape Maintenance at San Diego's PETCO Park, showed me something I had never seen before and that was a baseball field with the infield mowed taller than the outfield.

"The Bull's-Eye Bermudagrass on this new field was first mowed at 7/8 inch but the surface was too slow for the Padres." After a season of fine tuning here's how Luke and the Padres play it: The game condition mowing height for the outfield is a 1/2 inch and the infield is 3/4 inch. At 3/4 inch the outfield was too tall and players complained of hanging up cleats in the surface that was too slow and soft for their level of ability. Luke altered the mowing strategy to remedy the surface without damaging the grass, in fact, he says the aggressive Bulls-Eye prefers it that way.

"They needed a faster and firmer surface that didn't hang up cleats. To get that we needed to drop the mowing height to 1/2 inch." He goes on to explain "mowing the aggressive Bermudagrass constantly at the same height allows the grass to get puffy and scalping occurs that makes the surface uneven and unsightly, so when the team is away for 7 days we drop the mowing height of the outfield to 3/8-inch and the infield to 1/2 inch."

They do this for 3 days to scalp off the puffy top of the Bermudagrass and allow new growth from below. "We raise the height back up to normal 4 days before they return. For a 14-day road trip we also have time to do some verticutting and topdressing."

Jeff Salmond, John Netwal, and Luke Yoder are three of your fellow sports turf managers that will be at the 2005 STMA gathering in Phoenix and they will be able to give you a first hand account of their mowing strategies.

Umpires and officials enforce rules of the game. Coaches, players, and athletic directors often influence the playing height of the field. But don't you ever forget that Mother Nature is the judge of all rules. Mow too short or too tall, not often enough or not at all, and she will make you pay with green you can't afford. These three wise men have figured it out. **ST**

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